RESPONSE TO RESTRICTION REQUIREMENT AND PRELIMINARY AMENDMENT

Serial Number: 10/815,565 Filing Date: March 31, 2004

Title: JET-DISPENSED STRESS RELIEF LAYER IN CONTACT ARRAYS, AND PROCESSES OF MAKING SAME

Assignee: Intel Corporation

IN THE CLAIMS

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Please amend the claims as follows.

1. (Original) A process comprising:

dispensing a polymer stress-relief layer upon a substrate lower surface under conditions to partially embed an electrical first bump disposed upon the lower surface; and curing the stress-relief layer.

- 2. (Original) The process of claim 1, following curing the stress-relief layer, further including reflowing the electrical first bump.
- 3. (Original) The process of claim 1, wherein dispensing a polymer includes dispensing in a continuous action.
- The process of claim 1, wherein dispensing the polymer 4. (Original) stress-relief layer includes forming a substantially continuous stress-relief layer film between the electrical first bump and an electrical second bump that is spaced apart and adjacent to the electrical first bump.
- 5. The process of claim 1, wherein dispensing the polymer (Original) stress-relief layer includes forming a substantially continuous stress-relief layer film between the electrical first bump and a plurality of electrical subsequent bumps in excess of two, at least one of which is spaced apart and adjacent to the electrical first bump.
- 6. The process of claim 1, wherein dispensing the polymer (Original) stress-relief layer includes ejecting a substantially continuous polymer mass upon the lower surface that includes a ball grid array in excess of four electrical bumps including the electrical first bump.

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7. (Original) The process of claim 1, wherein dispensing the polymer stress-relief layer includes ejecting a discrete series of quanta of polymer masses upon the lower surface that includes a ball grid array in excess of four electrical bumps including the electrical first bump.

8. The process of claim 1, wherein dispensing the polymer (Original) stress-relief layer includes ejecting a polymer first mass and a polymer second mass upon the lower surface that includes a ball grid array of at least six electrical bumps:

wherein the electrical first bump is in a rectangular pattern with an electrical second bump, an electrical third bump, and an electrical fourth bump, wherein the polymer first mass is ejected contiguous with only the electrical first bump, the electrical second bump, the electrical third bump, and the electrical fourth bump; and

wherein the electrical first bump and the electrical second bump are in a rectangular pattern with an electrical fifth bump and an electrical sixth bump, wherein the polymer second mass is ejected contiguous with only the electrical first bump, the electrical second bump, the electrical fifth bump, and the electrical sixth bump.

9. The process of claim 1, wherein the electrical first bump (Original) includes a first height, and wherein dispensing the polymer stress-relief layer includes dispensing in a depth range against the electrical first bump in a range from about 5 percent the first height to about 95 percent the first height.

10 - 26.(Canceled).

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27. (New) A process comprising:

dispensing a polymer stress-relief layer upon a substrate lower surface under conditions to partially embed an electrical first bump disposed upon the lower surface, wherein the polymer stress-relief layer includes a polymer selected from a resin, an epoxy, a cyanate ester, a polymide, a polybenzoxazole, a polybenzimidazole, a polybenzothiazole, and combinations thereof; and

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curing the stress-relief layer.

28. (New) The process of claim 27, wherein the substrate lower surface is a mounting substrate land side, wherein the polymer includes a polybenzoxazole prepolymer, the process further including:

ejecting the prepolymer onto the mounting substrate land side; and heating the prepolymer to a temperature above the glass-transition temperature thereof.

29. (New) The process of claim 27, wherein the substrate lower surface is a mounting substrate land side, wherein the polymer includes a cyanate ester prepolymer, the process further including:

ejecting the prepolymer onto the mounting substrate land side; and heating the prepolymer to a temperature above the glass-transition temperature thereof.

30. (New) The process of claim 27, wherein the substrate lower surface is a mounting substrate land side, wherein the polymer includes a polybenzimidazole prepolymer, the process further including:

ejecting the prepolymer onto the mounting substrate land side; and heating the prepolymer to a temperature above the glass-transition temperature thereof.

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(New) The process of claim 27, wherein the substrate lower surface is a mounting 31. substrate land side, wherein the polymer includes a polybenzothiazole prepolymer, the process further including:

ejecting the prepolymer onto the mounting substrate land side; and heating the prepolymer to a temperature above the glass-transition temperature thereof.

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32. (New) A process comprising:

dispensing a polymer stress-relief layer upon a substrate lower surface under conditions to partially embed an electrical first bump disposed upon the lower surface;

mating the electrical first bump through a pre-applied solder flux spot on a board; and curing the polymer stress-relief layer.

- 33. (New) The process of claim 32, wherein the substrate lower surface is a mounting substrate land side; and wherein curing includes heating the prepolymer to a temperature above the glass-transition temperature thereof.
- 34. (New) The process of claim 32, wherein curing also includes curing the pre-applied solder flux spot on the board.
- 35. (New) A process comprising:

locating an electrical first bump upon a substrate lower surface, wherein the electrical first bump touches a peripheral ring polymer stress relief layer;

dispensing a polymer stress-relief layer upon the substrate lower surface under conditions to partially embed the electrical first bump disposed upon the lower surface; and curing the polymer stress-relief layer.

- 36. (New) The process of claim 35, wherein dispensing includes forming the polymer stressrelief layer in a spiral pattern.
- 37. (New) The process of claim 35, wherein dispensing includes forming the polymer stressrelief layer in a serpentine pattern.